

What is claimed is:

1. A method for treating combustible wastes, comprising the steps of:

carbonizing combustible wastes to obtain carbonized products and combustible gas; and

using said carbonized products to purify exhaust gas from a process.

2. The method of claim 1, wherein said combustible wastes contain at least one selected from the group consisting of paper and plastics.

3. The method of claim 2, wherein said combustible wastes further contain at least one selected from the group consisting of coal, coal tar, pitch, activated sludge, and oil-based residue.

4. The method of claim 2, wherein said combustible wastes further contain at least one selected from the group consisting of mill scales and dust of an electric dust collector.

5. The method of claim 1, wherein said step of carbonizing comprises carbonizing said combustible wastes at a carbonization temperature of 400°C or more.

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6. The method of claim 5, wherein said step of carbonizing comprises carbonizing said combustible wastes at a carbonization temperature of 600°C or more.

7. The method of claim 6, wherein said step of carbonizing comprises carbonizing said combustible wastes at a carbonization temperature of 1000 to 1300°C.

8. The method of claim 1, wherein said step of carbonizing comprises carbonizing said combustible wastes in an inert atmosphere.

9. The method of claim 1, wherein said step of carbonizing comprises:

carbonizing said combustible wastes to obtain carbonized products and combustible gas; and

activating said carbonized products.

10. The method of claim 1, further comprising the step of grinding said carbonized products so as to have a particle size of 5 mm or smaller.

11. The method of claim 1, wherein said carbonized products have a volatile matter of 5 wt% or less.

12. The method of claim 11, wherein said carbonized products have a volatile matter of 1 wt% or less.

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13. The method of claim 1, wherein said exhaust gas from a process is exhaust gas from one process selected from the group consisting of a refuse incinerator, electric power plant, steel-making electric furnace, scrap melting furnace, and sintering machine for manufacturing iron.

14. The method of claim 1, further comprising the step of using the recovered carbonized products as a fuel or a raw material.

15. The method of claim 13, wherein said fuel is a fuel used for manufacturing sintered ore in a sintering machine for iron making.

16. The method of claim 1, further comprising the step of using said combustible gas as a heat source for carbonization or iron-manufacturing process.

17. The method of claim 1, wherein said combustible wastes are a refuse derived fuel (RDF).

18. The method claim 1, wherein

said combustible wastes contain at least one selected from the group consisting of paper and plastics;

said combustible wastes further contain at least one selected from a group consisting of mill scales and dust of

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an electric dust collector; and

said step of carbonizing comprises carbonizing combustible wastes at a carbonization temperature of 1000 to 1300°C.

19. A method for treating combustible wastes, comprising the steps of:

preliminarily carbonizing said combustible wastes to produce preliminarily carbonized products;

molding said preliminarily carbonized products to produce molded products; and

carbonizing said molded products to produce carbonized products.

20. The method of claim 19, wherein said step of preliminarily carbonizing comprises preliminarily carbonizing combustible wastes at a temperature of 300 to 800°C.

21. The method of claim 19, wherein said step of molding comprises molding said preliminarily carbonized products by a briquetting machine to produce briquettes.

22. The method of claim 19, wherein said step of carbonizing comprises carbonizing said molded products to at a temperature of 600 to 1000°C.

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23. The method of claim 19, wherein said step of carbonizing comprises carbonizing said molded products in the presence of water vapor.

24. The method of claim 19, wherein said step of carbonizing comprises carbonizing said molded products by using carbonization gas as a heat source.

25. The method of claim 19, wherein said combustible wastes are combustible wastes containing a refuse derived fuel.

26. The method of claim 19, wherein said combustible wastes are a refuse derived fuel.

27. The method of claim 19, wherein said combustible wastes have an O/C atomicity ratio of 0.2 to 0.8 and an H/C atomicity ratio of 0.5 to 2.3.

28. The method of claim 19, further comprising the steps of:

disintegrating said preliminarily carbonized products;
and

removing iron and nonferrous metals from the
disintegrated preliminarily carbonized products.

29. The method of claim 19, further comprising the step of adding coal or coke to said preliminarily carbonized

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products.

30. The method of claim 19, further comprising the step of adding and mixing a binder to and with said preliminarily carbonized products.

31. The method of claim 19, further comprising the step of using said carbonized products as an agent for treating exhaust gas.

32. The method of claim 19, further comprising the steps of:

removing granular carbonized products from said carbonized products; and

returning said granular carbonized products to said step of molding the preliminarily carbonized products.

33. The method of claim 19, further comprising the steps of:

removing granular carbonized products from said carbonized products; and

using said granular carbonized products as a raw material blown as a fuel.

34. Activated charcoal manufactured by the method for treating combustible wastes according to claim 19.

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35. The carbonized products of claim 34, wherein said activated charcoal has a Roga's strength of 88% or higher and a specific surface area of 148 m²/g or larger.

36. A method for treating combustible wastes, comprising the steps of:

carbonizing said combustible wastes at a temperature of 500 to 1000°C; and

obtaining carbonized products and carbonization gas after the carbonization.

37. The method of claim 36, wherein said carbonizing is carried out under a pressure of 0.5 to 50 MPa.

38. The method of claim 36, wherein said combustible wastes are a solid fuel in which refuse is solidified.

39. The method of claim 36, wherein said combustible wastes comprises a solid fuel in which refuse is solidified and coal or high-carbon refuse.

40. The method of claim 36, wherein the residue obtained by carbonization is ground to separate a carbon matter and ash.

41. The method of claim 36, further comprising the step of using said carbonization gas as a heat source for carbonization.

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42. A method for treating combustible wastes, comprising the steps of:

preparing a refuse derived fuel;

carbonizing said refuse derived fuel at a temperature of 500 to 1000°C; and

obtaining carbonized products and carbonization gas after the carbonizing.

43. The method of claim 42, wherein said step of preparing the refuse derived fuel comprises impregnating said refuse derived fuel with a binder.

44. The method of claim 42, wherein said step of preparing the refuse derived fuel comprises impregnating said refuse derived fuel with a binder and compression molding said refuse derived fuel.

45. The method of claim 42, wherein said step of carbonizing comprises carbonizing said refuse derived fuel in the presence of water vapor.

46. The method of claim 42, further comprising the step of activating said carbonized products.

47. The method of claim 42, further comprising the step of using said carbonization gas as a heat source for

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carbonizing.

48. Activated charcoal manufactured by the method for treating combustible wastes according to claim 42.

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